Biometrics in the Age of Mobility

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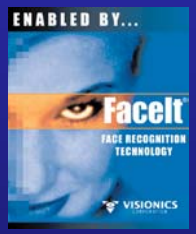
VISIONICS (NASDAQ:VSNX)

- Global Biometric Industry Leader

Face **Finger** Mobile ID Systems Biometric Platform



- >180 employees
- >$30 mil revenue(01)

Establishing Credentials

In a modern/networked world, a growing number of our actions require identification

- Financial Transactions
- Airline Check-in & Boarding
- Voting
- Access (Facilities, Networks & Information)
- Human Presence (Surveillance)
- Non-cooperative identification (criminal justice)

Traditional Methods

What You Know

- PIN
- Password

What You Possess

- Key,
- Card
- Token
- ID document

Shortcomings

Not real Proof Of ID

Not Secure

Not Convenient

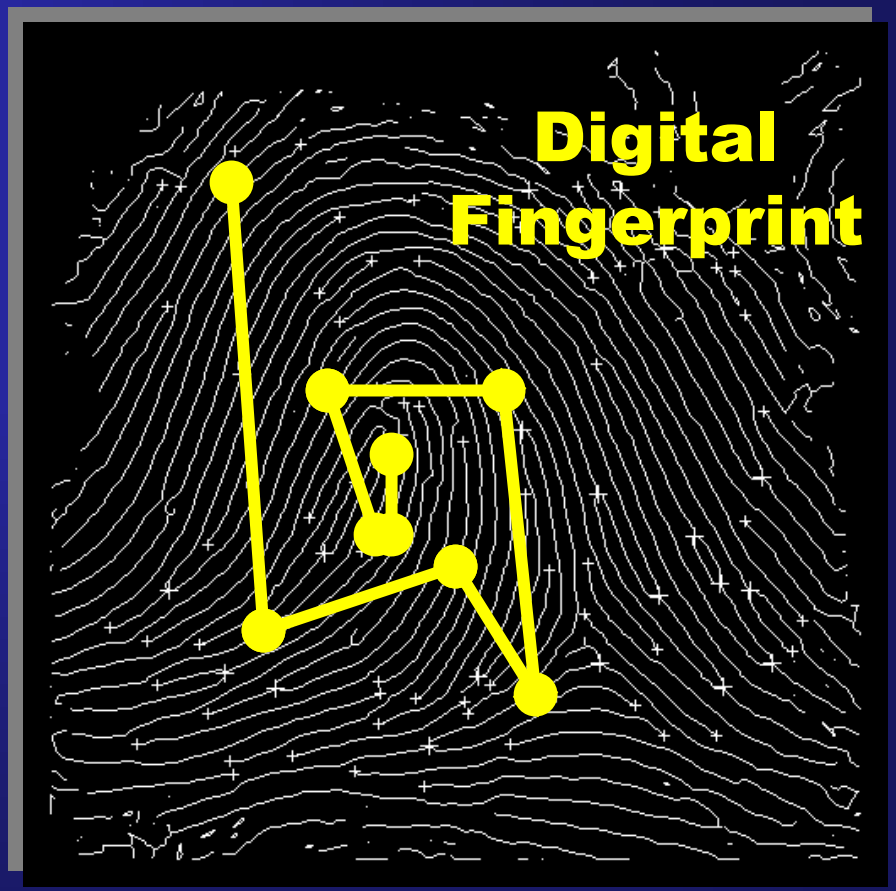
Costly

Biometrics

Stable unique patterns of the human body that can be imaged, analyzed, classified and used to identify an individual:

Patterns of landmarks

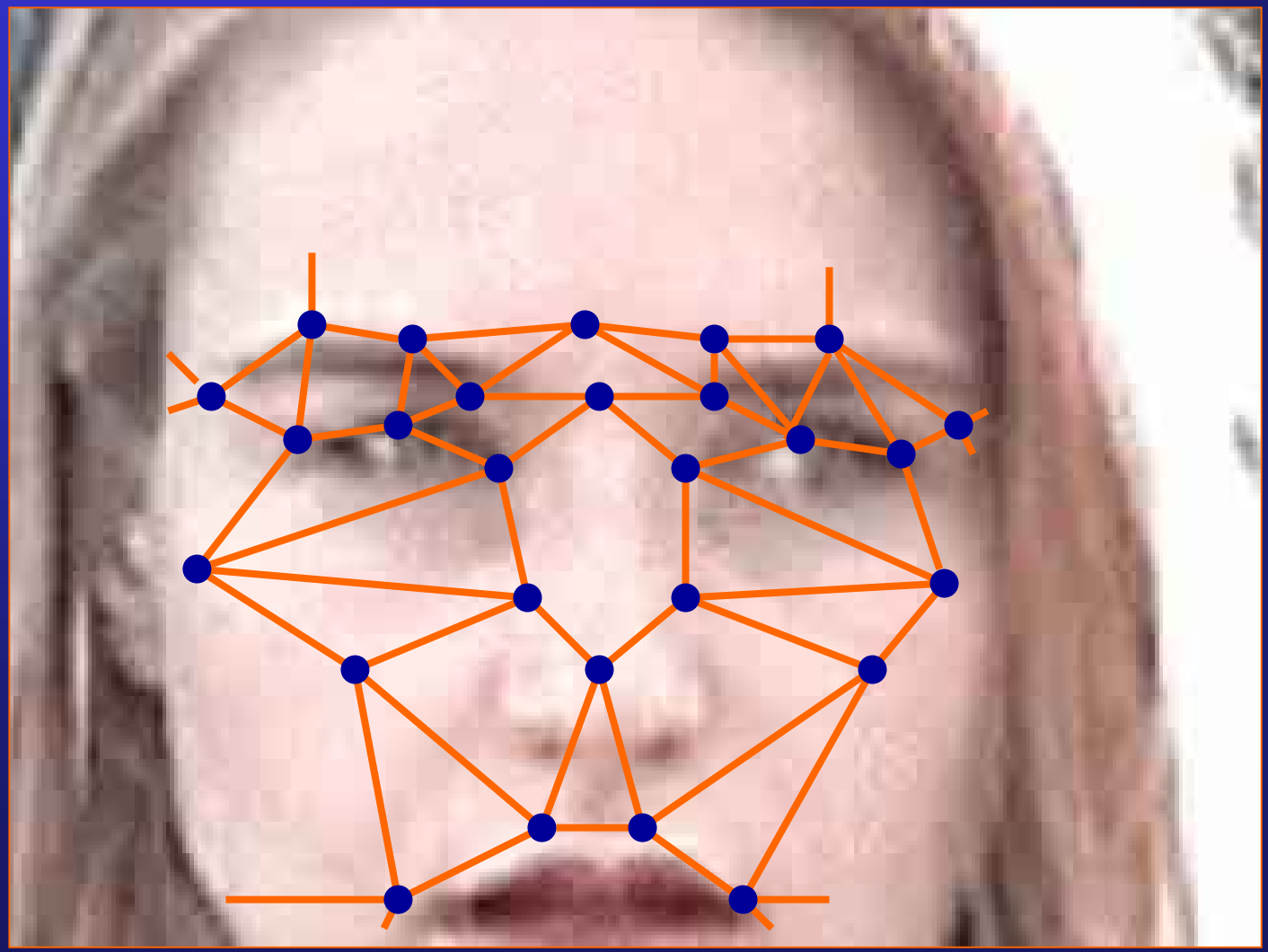
Finger



Image

Minutiae

Face Recognition

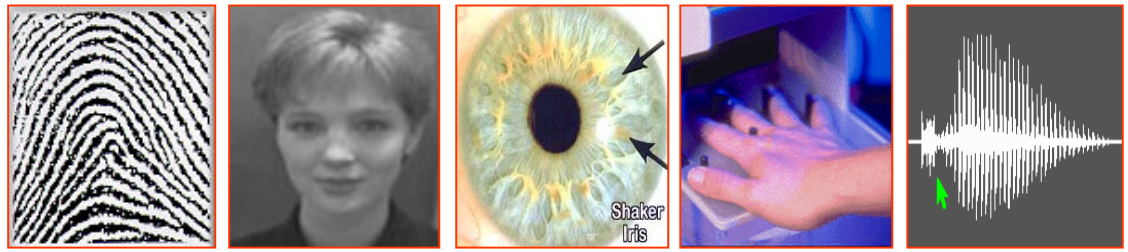


NodalPoints

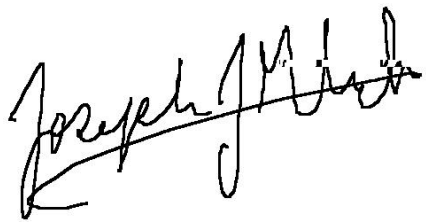
Faceprint

The Biometrics Family

Physical



Behavioral



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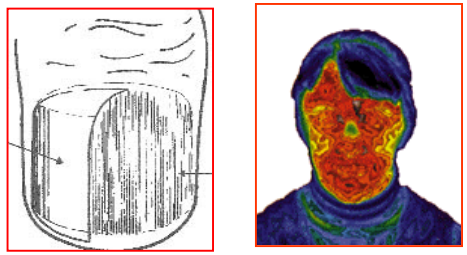
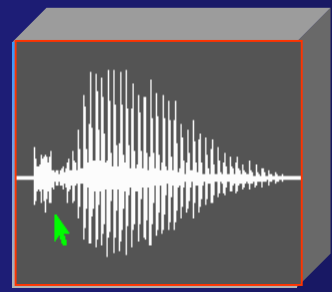


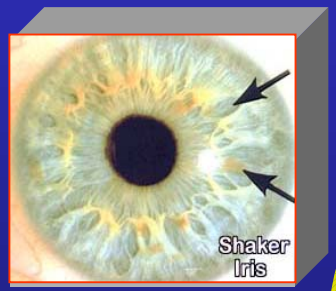
The Bioprint in Bytes

< 100

> 2000



512



Bioprint Size

<200

8

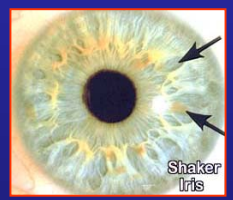
Sensor Form Factor

Low resolution CCD, CMOS, Miniature cameras

Forensic quality: 500 dpi CCD scanner

Commercial: 100-300 dpi optical sensor

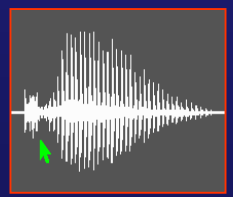
< 100 dpi capacitive sensor



High resolution 3 camera system

High resolution custom camera

Bulky hand guide with CCD

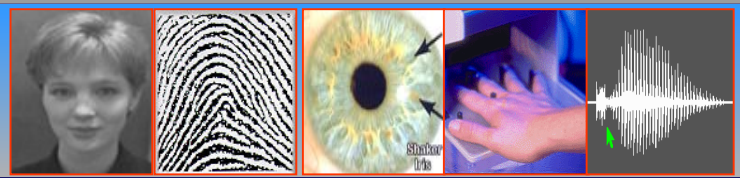


Standard microphone

Biometric Capabilities

I. Authentication

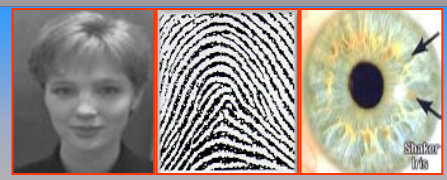
Q :  =  ?



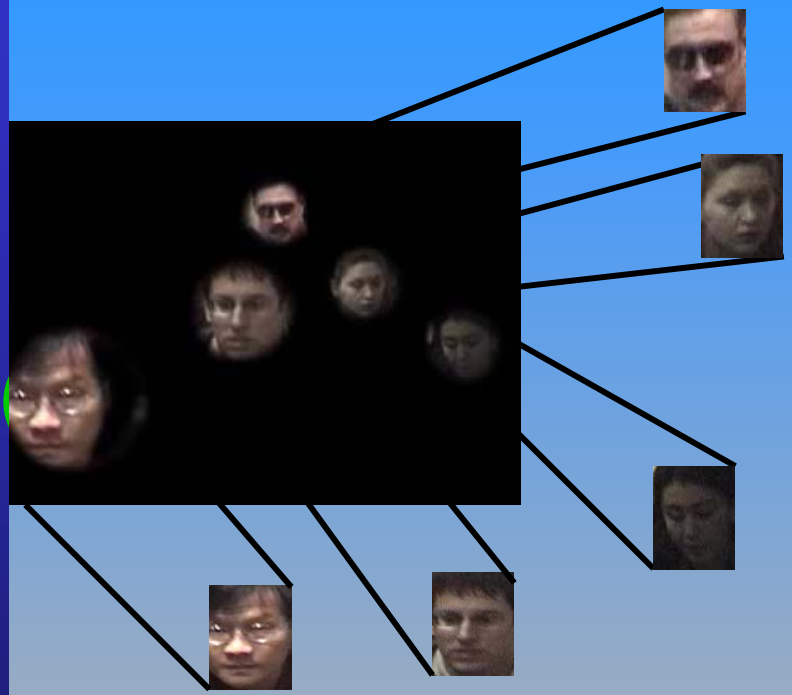
II. Identification

?

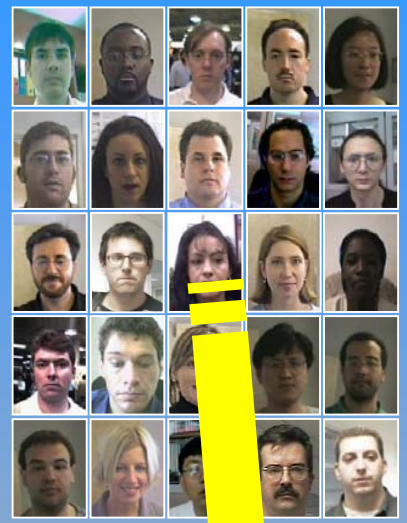
Database



III. ID at a Distance



10011001010
10101000001
11110101010
10101010101



Which Biometric?

- Believe all biometrics are viable
- Face has a special appeal

ID at Distance	Standard Infrastructure	Legacy ID Systems	Familiar

The Mobile Revolution

Mobile Computing ⟷ **Wireless Comm.**

2003

200-300 million devices

2003

Internet: Mobile access exceed fixed access 2 to 1

2005

40% of all mobile phones web-enabled

Courtesy: GSM Association & Tower Group

Devices

3G:
Broad band in palm of your hand?

Internet Enabled

Video

Bluetooth

Low Sensor Cost + 3G Bandwidth ⇒ Mobile Video telephony

2004: 20-50% of all mobile phones have cameras, EE Times 09/14/00


NOKIA
Anna Lloyd
Options
End

VARIOUS MOLD DESIGNS

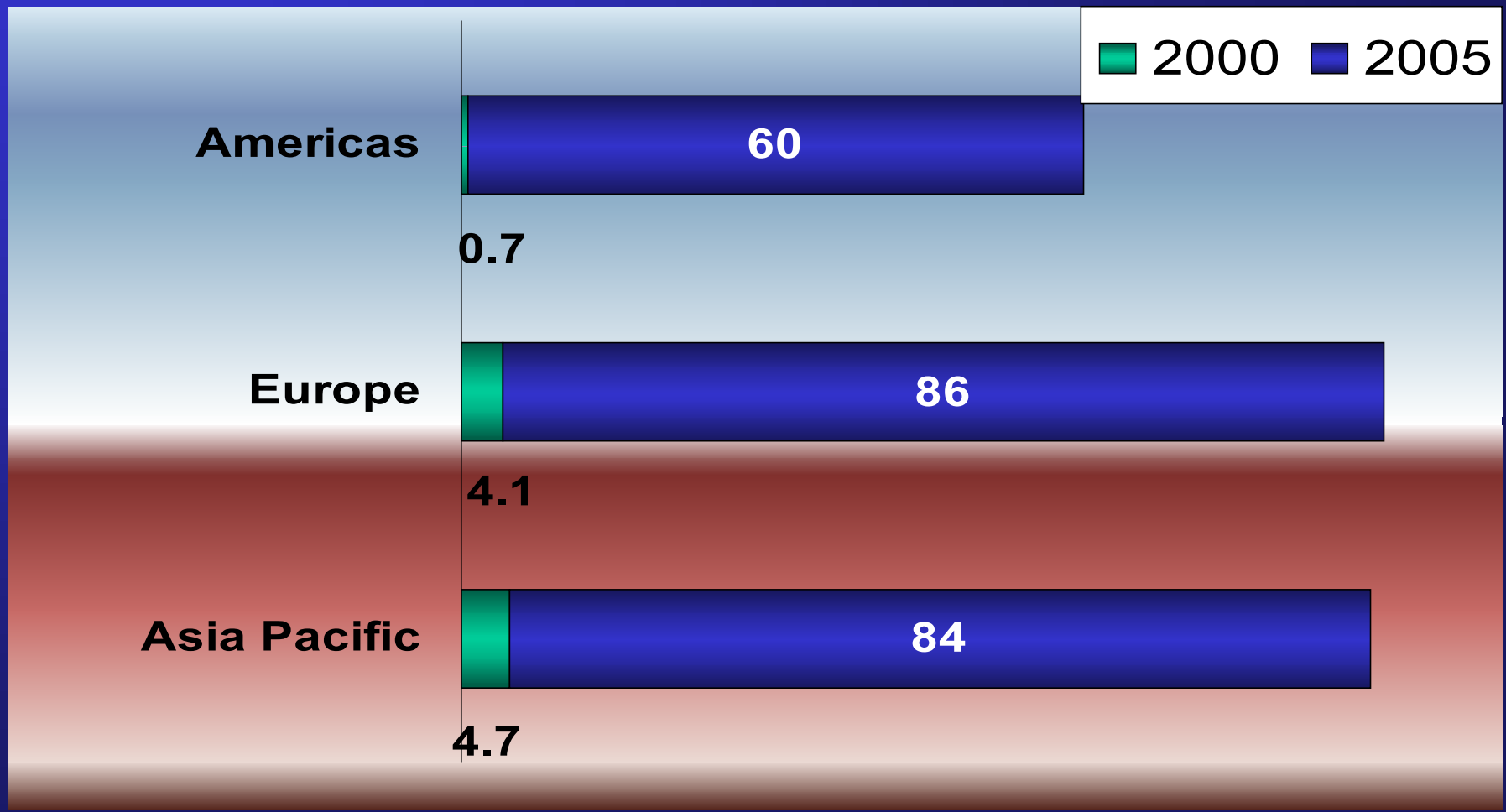
Functionality

- Personal Gateways to the world of Voice, Data, Video, Internet & Commerce
- Translate actions at fingertips into transactions that deliver & bind

Major difference from fixed internet:

Transactional NOT browsing

Mobile Commerce



Courtesy: Tower Group

Dependence

- As utility increases, so does dependence
- The need to guard these devices against theft & unauthorized use becomes a key issue
- Ironic that we are putting most power into least trustworthy devices—can be lost or stolen
- Unless it is the action that we secure not the device
- Back to associating action with identity securely and conveniently

>>>> Biometrics in a mobile world

Unique Challenge

Securing large number of low value transactions among large number of a priori unknown players

Thousand of merchants, millions of buyers.

Contrast with: Securing Interbank Foreign Exchange

Repeat fraud on small value transactions

Solution

Biometrics with PKI

Biometrics:

Access Control

Authentication

Non-repudiation

Audit

PKI:

Privacy

Integrity

Which Biometrics?

- Must use existing infrastructure; Biometrics will not be able to dictate the infrastructure,
- 3G has handed biometrics a ready-made mass infrastructure that is not intended for biometric security but could be used for it.

Natural Biometrics: Voice + Face.

- Voice: limited accuracy
- Finger print or iris sensors in phones?

Experience

FaceIt® in *RPM Network*

Self Service Financial Kiosks

~1100 machines already deployed

(1500 more under contract)

> 1,000,000 people enrolled

~3,000,000 facial transactions

innoVentry

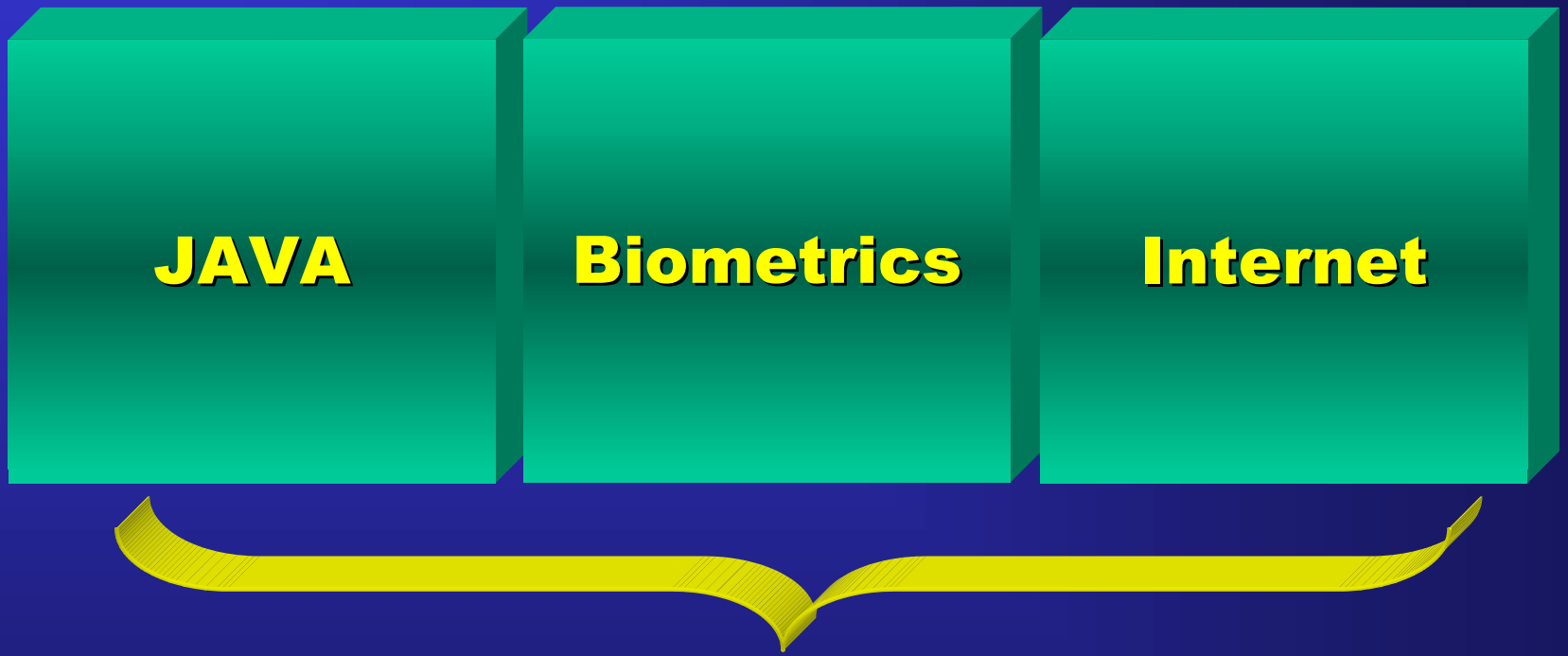
Subsidiary of Wells Fargo Bank

Largest Consumer Biometric Application to Date

Scalability

Transactions Per Year		
Credit Card	>40 Billion	Current
Travel	>10 Billion	Est. 10
Mobile Trans.	>1 Billion	Est. 04
NASDAQ	>1 Billion	Est. 03

Platform For Pervasive Identification

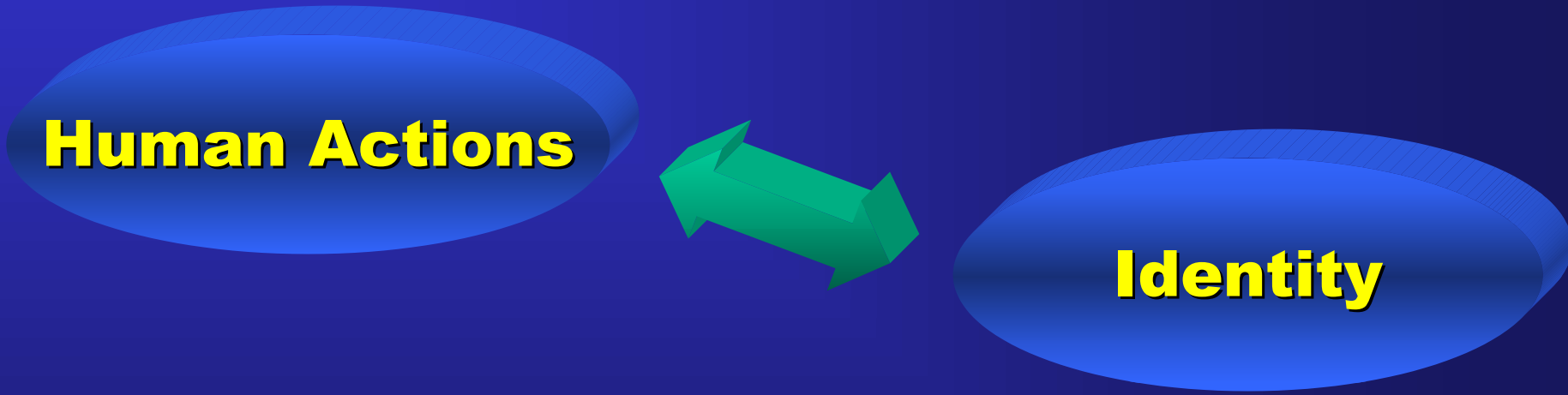


Visionics' Biometric Network Platform

Internet-Enabled Appliances & Servelets that Encapsulate Biometric Functions

Very Soon

A technology platform to associate



From any point of action and from any device will be omnipresent

Implications

- Security & Personalization for pervasive computing
- What about privacy?
- Powerful technology that requires responsible use
- IBIA

Thank you for your attention.

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